

on the provision of supplementary services such as directory assistance and published directories.<sup>818</sup>

Despite Telstra's dominant position, competition has spurred the carrier to improve and expand its service capability. Telstra is in the midst of a A\$3.9 billion (U.S.\$2.8 billion) network modernization project.<sup>819</sup> Of that amount, Telstra is spending A\$710 million to extend a fiber/coax network to more than one million homes by the end of 1996, and to more than four million homes by 2000.<sup>820</sup>

Formed in late 1991, Optus is an international consortium licensed by the Australian government to build and operate Australia's second telecommunications network. Optus provides a full spectrum of cellular telecommunications, switched network, enhanced wireline services, and satellite-based services.<sup>821</sup> Optus launched its domestic and international long-distance services in late 1992 and, within a year and a half, had attracted more than one million customers.<sup>822</sup> More than 70 percent of the Australian population currently has access to long-distance service provided on the Optus network.<sup>823</sup> Optus has completed construction of most of its long-distance network and has built basic infrastructure for local business services in Canberra, Melbourne, and Sydney. Optus has installed long-distance and local service switches in the six mainland capital cities and over 3,000 miles of optical fiber cable throughout the country. Optus also offers a limited number of local business services such as data services via its terrestrial and satellite facilities. By 1997, Optus intends to be able to offer long-distance service to 100 percent of the Aus-

818. *Id.*

819. Bruce Jacques, *News Corp and Telstra in pay-TV deal*, FIN. TIMES, Mar. 10, 1995, at 32.

820. TELSTRA CORP. LTD., 1994 ANNUAL REPORT 18 (1994).

821. BELL SOUTH CORP., 1994 SEC FORM 10-K, at 11 (1995).

822. CABLE & WIRELESS PLC, 1994 SEC FORM 20-F, at 39 (1994).

823. BELL SOUTH CORP., 1994 SEC FORM 10-K, at 11 (1995).

tralian population.<sup>824</sup> Optus has captured approximately 12 percent of Australia's domestic and international long distance market.<sup>825</sup> Optus reported an operating loss of A\$69 million on revenue of A\$300 million in 1994, but the company expects to be profitable by 1996.<sup>826</sup>

An Australian consortium owns 50.4 percent of Optus,<sup>827</sup> while two foreign telecommunications firms own the remaining 49.6 percent. The ownership of the Australian consortium is as follows: Mayne Nickless owns 49.6 percent; the AMP Society owns 19.6 percent; the AIDC Telecommunications Fund owns 19.6 percent; and National Mutual owns 11.8 percent.<sup>828</sup> BellSouth and Cable & Wireless each own half of the foreign consortium, giving them both a 24.8 percent stake in Optus.<sup>829</sup>

In April 1994, Optus entered into an agreement under which Nine Network Australia Ltd. would purchase 15 percent of Optus for approximately A\$318 million.<sup>830</sup> This transaction would reduce the ownership interests of BellSouth and Cable & Wireless from 24.8 percent to 20.85 percent.<sup>831</sup> The financial community expects Optus to undertake a public offering of stock by the end of 1997.<sup>832</sup> The date of the offering depends largely upon the status of the Optus Vision venture, which we shall examine shortly.<sup>833</sup>

824. UNIVERSITY OF COLORADO INTERDISCIPLINARY TELECOMMUNICATIONS PROGRAM, *supra* note 3, at 2-4 (1994).

825. *Australian channels plan autumn pay-TV launch*, SCREEN FIN., Apr. 5, 1995.

826. BEYOND THE DUOPOLY, *supra* note 780, at 12.

827. UNIVERSITY OF COLORADO INTERDISCIPLINARY TELECOMMUNICATIONS PROGRAM, *supra* note 3, at 2-4.

828. *Id.*

829. BELL SOUTH CORP., 1994 SEC FORM 10-K, at 11 (1995); CABLE & WIRELESS PLC, 1994 SEC FORM 20-F, at 39 (1994).

830. *Id.*

831. *Id.*

832. Mikki Tait, *Optus doubt over float date*, FIN. TIMES, Mar. 17, 1995, at 28.

833. *Id.*

*Broadband Networks and Services.* Probably the most dynamic segments of the Australian telecommunications market are broadband networks and the alternate delivery of broadband services such as pay television. As of 1995, cable television in Australia is virtually nonexistent. Only in early 1995 did the Australian government issue cable licenses.<sup>834</sup> As of the middle of 1995, Australia had only one pay-television service.<sup>835</sup> Thus, with a lack of an entrenched cable television industry and a market of six million households,<sup>836</sup> there exists tremendous opportunity in the deployment of broadband delivery systems.

Three available means exist for distributing broadband multimedia signals in Australia: cable (either fiber-optic or coaxial or a hybrid of the two); Multipoint Distribution Systems (MDS) using microwave frequencies; and Direct Broadcast Satellite transmission (DBS).

Australia has no regulatory barrier prohibiting the delivery of video and telephony services over the same network.<sup>837</sup> Therefore, the potential combined revenues from video and telephony over a wire-based network have made the deployment of a fiber-optic/coaxial hybrid infrastructure particularly enticing for prospective investors. Some of Australia's largest communications companies—including Telstra, Optus, News Corp., and Publishing and Broadcasting Limited—have invested in developing the broadband cable networks, largely because of the lucrative promise of broadband interactivity.

Perhaps because of its existing customer base, Telstra appears to have the early lead in the race toward broadband interactivity. As mentioned earlier, Telstra has initiated a A\$3.9 billion (U.S.\$2.8 billion) project to create a broadband

834. *Australian channels plan autumn pay-TV launch*, *supra* note 825.

835. *Id.*

836. Emmy Tagaza, *Pay-TV launch today ends tale of indecision*, *FIN. POST*, Jan. 26, 1995, at 17.

837. *Australian channels plan autumn pay-TV launch*, *supra* note 825.

network, connecting more than 4 million Australian homes by 1999.<sup>838</sup> Telstra is constructing a fiber/coax hybrid network alongside the existing telephone network.<sup>839</sup> As of April 1995, the network reached 500,000 homes; Telstra plans to reach one million households by 1996 and to complete the network buildout by 2000, at which time it will pass four million homes, or 60 percent of country.<sup>840</sup> Telstra expects to begin offering pay television services by August or September 1995 to homes in Sydney and Melbourne.<sup>841</sup>

Optus has enlisted in its broadband initiative the financial assistance and network expertise of one of America's largest MSOs. In July 1994, Optus entered a joint venture with Continental Cablevision and Publishing and Broadcasting Limited (PBL) to develop a high capacity broadband network in Australia.<sup>842</sup> Optus and Continental Cablevision each own 47.5 percent, and PBL, an Australian media company controlled by magnate Kerry Packer, owns 5 percent.<sup>843</sup> PBL, pursuant to option, had increased its equity stake to 20 percent, and the Australian television broadcaster, the Seven Network, had a 15 percent interest; but PBL reduced its stake back to 5 percent and Seven Network withdrew from the venture entirely when the Australian government ruled that the broadband networks being constructed by Telstra and Optus Vision will have to be open (as of 1997) to any entity wishing to provide a service over the networks.<sup>844</sup>

Optus created a separate joint venture to construct the broadband network not only to share the financial burden, but also because Optus hoped that, through a separate entity, it could maintain the broadband network as a closed network

838. Jacques, *supra* note 819, at 32.

839. *Australian channels plan autumn pay-TV launch*, *supra* note 825.

840. *Id.*

841. *Id.*

842. BELL SOUTH CORP., 1994 SEC FORM 10-K, at 11 (1995).

843. *Id.*

844. *Australian channels plan autumn pay-TV launch*, *supra* note 825.

reaching all the way to the home. The Australian government upset those expectations when it mandated open access and interconnection to the broadband network. Optus, however, still intends to lease capacity on the network to provide local telephony services for the first time.<sup>845</sup> To carry the local telephony traffic, at least initially, Optus Vision will likely construct a network similar to the cable/telephony networks in the U.K., where they have extended to the home a traditional copper pair bundled with a coaxial cable.<sup>846</sup> Optus Vision intends to pass 100,000 homes by the end of 1995 and three million homes by 1999.<sup>847</sup> Scientific-Atlanta, the Georgia-based telecommunications equipment manufacturer, won the contract to build Optus Vision's broadband network.<sup>848</sup> The contract to supply and install distribution equipment for an Australian network that will carry voice, video, and data to three million homes will be worth up to \$180 million over four years.

Another American MSO also plans to participate in Australia's broadband future. Cox Cable Communications has entered into a joint venture with Rowcom Holdings, a privately held Australian television licensee, to construct a cable network in Queensland.<sup>849</sup> The two companies plan to spend A\$500 million (U.S.\$370 million) on network buildout.<sup>850</sup> The proposed network will potentially serve more than 700,000 households in an area stretching from Brisbane north to the Sunshine Coast and south to the Gold Coast.<sup>851</sup> The venture

845. *Id.*

846. *Id.*

847. *Id.*

848. Bill Husted, *Scientific-Atlanta wins contract with Australian cable network Deal could total \$180 million*, ATLANTA J. & CONST., Apr. 12, 1995, at E2.

849. *Cox Cable to Develop a Cable Network in Australia*, N.Y. TIMES, Aug. 16, 1994, at D3.

850. BEYOND THE DUOPOLY, *supra* note 780, at 18.

851. Don Groves, *Cox Cable ready to wire Oz with no place to hang*, DAILY VARIETY, Mar. 6, 1995.

has stumbled because of a dispute with Optus Vision over rights-of-way. Like its rival, the Cox/Rowcom venture intends to string cable along electric utility poles. Optus Vision, however, has exclusive agreements with the power authority of Southeast Queensland to run cables along the electricity poles.<sup>852</sup> Rowcom Holdings holds licenses for up to twenty-eight cable systems, but does not yet have a means of distribution.<sup>853</sup>

Paynet Telecommunications, a Canadian-backed entity, plans to offer cable services to the northeastern coast of Queensland.<sup>854</sup>

Many of the companies mentioned above have hedged their bets concerning multimedia by investing also in the wireless broadband delivery systems, MDS and DBS, while securing programming rights for both the wire-based and wireless systems by forming equity relationships with established media companies. Cox, for example, also has an equity interest in a programming venture called Australian Information Media. The Australian Broadcasting Corporation owns 51 percent of Australian Information Media; Cox owns 24.5 percent; and the John Fairfax Press Group owns the remainder.<sup>855</sup> The venture will produce two channels for pay television, the News Channel (20 percent owned by CNN), and a hybrid channel that will carry Nickelodeon programming during the day and dramas, documentaries, and general entertainment during the evening. Viacom owns 40 percent of the hybrid channel.

Australis Media, the Australian pay television company, has succeeded in gaining a first entrant advantage over the wire-based ventures and other wireless undertakings. Australis owns a significant majority of Australia's microwave licens-

852. *Id.*

853. *Id.*

854. Tagaza, *supra* note 836, at 17.

855. Groves, *supra* note 851.

es.<sup>856</sup> In January 1995, Australis launched Galaxy TV, Australia's first pay television service. Galaxy has two channels and is distributed by microwave.<sup>857</sup> The service is available in Sydney, Melbourne, Brisbane, and Canberra, and will gradually extend to other regions.<sup>858</sup> By July 1995, Australis intends to reach 90 percent of the Australian population.<sup>859</sup> Australis Media intends to supplement its MDS service with DBS to reach hilly regions that are difficult to cover with microwave transmissions.<sup>860</sup> As of April 1995, Galaxy had 3,000 subscribers; the service is believed to need 500,000 subscribers to break even.<sup>861</sup>

Telstra has teamed with News Corp. to enter the pay television market through a deal with the existing domestic pay television operator, Australis Media.<sup>862</sup> Telstra and News Corp. each acquired an 8.3 percent stake in Australis.<sup>863</sup> Telstra and News Corp. also intend to form a pay television venture called Foxtel.<sup>864</sup> Australis will have the option to acquire up to 20 percent of Foxtel, and the existing Australis pay services will be provided over both the Australis wireless network and the Telstra's wire-based network.<sup>865</sup> The deal is subject to the antitrust review of the Trade Practices Commission. Also under the terms of the deal, Foxtel will have access to Australis Media's programming contracts with Hollywood studios, and Australis will provide sports programming through its venture with TCI's Liberty Sports.<sup>866</sup> The Lenfest

856. Tagaza, *supra* note 836, at 17.

857. *Australian channels plan autumn pay-TV launch*, *supra* note 825.

858. *Id.*

859. Tagaza, *supra* note 836, at 17.

860. *Australian channels plan autumn pay-TV launch*, *supra* note 825.

861. *Id.*

862. Jacques, *supra* note 819, at 32.

863. *Id.*

864. *Id.*

865. *Id.*

866. *Australian channels plan autumn pay-TV launch*, *supra* note 825.

Group, based in the U.S., owns 35 percent of Australis Media; TCI owns 50 percent of Lenfest.<sup>867</sup>

*Wireless.* First offered in Australia in 1987, cellular telephony has already been widely embraced by the Australian people. The introduction of competition to the market and the development of digital GSM networks has accelerated the rate of growth in demand. About one in every fifteen Australians subscribes to mobile telephone service—one of the highest penetration rates in the world.<sup>868</sup> The cellular market has grown more than 200 percent per year from 425,000 customers when competition began in June 1992 to more than 1.25 million customers as of June 1994.<sup>869</sup> Industry experts predict that 11 percent of the Australian populace will own a mobile telephone by 2000.<sup>870</sup>

The usual factors have contributed to the robust growth of the Australian cellular market: (1) service has improved; (2) price of service has fallen; (3) pricing flexibility has allowed for more attractive package offerings to consumers; and (4) the cost of handsets has continued to decline. Most, if not all, of these factors have resulted from competition.<sup>871</sup> The increased competition has brought increased investment. As of August 1994, with GSM infrastructure development only partially complete, the Telecommunications Industry Development Authority estimated that the three carriers had invested A\$728 million on GSM infrastructure development.<sup>872</sup>

Three telecommunications operators provide national cellular service in Australia. The Australian government maintained a duopoly—Telstra and Optus—in mobile telecommuni-

867. Tagaza, *supra* note 836, at 17.

868. TELSTRA CORP. LTD., 1994 ANNUAL REPORT 16 (1994).

869. BEYOND THE DUOPOLY, *supra* note 780, at 11.

870. *Vodafone Goes Live*, EXCHANGE, Oct. 1, 1993.

871. Rob Winkler, *Australian Cellular: A Case Study in GSM*, TELECOM PERSPECTIVES, Aug. 1994, at 19.

872. *Id.*



cations services until June 30, 1993, when the Australian government awarded the third license to operate a nationwide cellular network to Vodafone.<sup>873</sup> Telstra and Optus both market analog cellular service. All three carriers provide digital cellular service, and each one launched its digital service in 1993.<sup>874</sup> The Australian government will license no other cellular carriers until 1997, but thereafter the government will open the market to full competition.<sup>875</sup>

Telstra operates an analog cellular network (Advanced Mobile Phone System, or AMPS) and a digital network (Global System for Mobile communications, or GSM). Telstra introduced analog cellular service in 1987,<sup>876</sup> calling its network MobileNet and marketing its cellular service under the brand name "Telecom MobileNet."<sup>877</sup> By the end of the 1993 fiscal year, Telecom MobileNet had more than 560,000 customers, up 27 percent from the previous year.<sup>878</sup> At that time, Telstra operated the fifth fastest growing cellular network in the world.<sup>879</sup> Despite a government mandate that Telstra phase out its analog network by 2000,<sup>880</sup> Telstra remains committed to maintaining an active analog network and continues to invest in its expansion.<sup>881</sup>

Optus markets analog cellular service on Telstra's network. Optus began reselling airtime on MobileNet in 1992.<sup>882</sup> Through its reselling efforts, Optus has captured 30

873. CABLE & WIRELESS PLC, 1994 SEC FORM 20-F, at 38 (1994).

874. Winkler, *supra* note 871, at 19.

875. *Id.*

876. *Id.*

877. COMPETITIVE SAFEGUARDS & CARRIER PERFORMANCE, *supra* note 783, at 5.

878. TELSTRA CORP. LTD., 1993 ANNUAL REPORT 12 (1993).

879. *Id.*

880. COMPETITIVE SAFEGUARDS & CARRIER PERFORMANCE, *supra* note 783, at 44.

881. Winkler, *supra* note 871, at 19.

882. *Id.*

to 35 percent of Australia's analog cellular market.<sup>883</sup> In 1994, the total number of subscribers to the analog network surpassed one million.<sup>884</sup> Approximately 98 percent of the 1.25 million cellular customers in Australia receive their service on Telstra's AMPS network, MobileNet.<sup>885</sup>

Telstra launched MobileNet Digital, its digital GSM service, in April 1993.<sup>886</sup> Telstra's cellular license extends until December 31, 2016.<sup>887</sup> At the end of the 1994 fiscal year, Telstra's digital network reached 70 percent of the population.<sup>888</sup>

Even though Telstra maintains the country's only analog cellular network, which carries 98 percent of all cellular traffic, the introduction of competition has already noticeably affected the cellular industry. In fact, Austel found that Telstra was no longer dominant in the mobile communications market, freeing Telstra from price controls that had hindered its ability to compete.<sup>889</sup> During the fiscal year ending June 1994, Telstra's mobile telephone charges fell by 7 percent.<sup>890</sup>

Optus began operating its digital GSM networks in May 1993.<sup>891</sup> Like Telstra's digital cellular license, Optus' license extends until December 31, 2016.<sup>892</sup> Optus had over 540,000 cellular customers at December 31, 1994. By that same date, Optus had installed its own digital cellular network in five capital cities and is continuing its buildout in other ar-

883. *Id.*

884. TELSTRA CORP. LTD., 1994 ANNUAL REPORT 16 (1994).

885. Winkler, *supra* note 871, at 19.

886. TELSTRA CORP. LTD., 1993 ANNUAL REPORT 12 (1993).

887. COMPETITIVE SAFEGUARDS & CARRIER PERFORMANCE, *supra* note 783, at 3.

888. TELSTRA CORP. LTD., 1994 ANNUAL REPORT 16 (1994).

889. TELSTRA CORP. LTD., 1994 ANNUAL REPORT 16 (1994).

890. COMPETITIVE SAFEGUARDS & CARRIER PERFORMANCE, *supra* note 783, at 44.

891. *Id.*

892. *Id.* at 3.

eas.<sup>893</sup> Optus markets its cellular service under the brand name Optus Mobile.<sup>894</sup>

In 1993, the Australian government awarded the third national cellular license to Vodafone.<sup>895</sup> Pursuant to a condition of its license, Vodafone was not allowed to begin offering cellular service until July 1, 1993.<sup>896</sup> Vodafone commenced service over its digital GSM network in the metropolitan areas of Sydney, Melbourne, and Canberra on October 1, 1993.<sup>897</sup>

Vodafone, like Telstra and Optus, has invested considerable amounts in its GSM network, but the recent entrant has yet to earn a profit. For the twelve months ending March 1994, Vodafone reported an operating loss of A\$23.7 million on revenues of A\$8.5 million.<sup>898</sup> Vodafone has announced that expenditures in its first five years of operation will total A\$500 million.<sup>899</sup>

The Vodafone Group plc of the United Kingdom owns 95 percent of Vodafone.<sup>900</sup> AAP Information Services, a subsidiary of AAP Telecommunications of Australia, owns the other 5 percent.<sup>901</sup>

Vodafone is required, under its license, to reduce its foreign ownership and achieve majority Australian shareholding by 2003.<sup>902</sup> Vodafone has already achieved ma-

893. BELL SOUTH CORP., 1994 SEC FORM 10-K, at 11 (1995).

894. COMPETITIVE SAFEGUARDS & CARRIER PERFORMANCE, *supra* note 783, at 5.

895. CABLE & WIRELESS PLC, 1994 SEC FORM 20-F, at 39 (1994); UNIVERSITY OF COLORADO INTERDISCIPLINARY TELECOMMUNICATIONS PROGRAM, *supra* note 3, at 2-4.

896. COMPETITIVE SAFEGUARDS & CARRIER PERFORMANCE, *supra* note 783, at 4.

897. *Vodafone Goes Live*, *supra* note 870.

898. BEYOND THE DUOPOLY, *supra* note 780, at 12.

899. *Id.*

900. VODAFONE GROUP PLC, 1994 SEC FORM 20-F, at 11.

901. UNIVERSITY OF COLORADO INTERDISCIPLINARY TELECOMMUNICATIONS PROGRAM, *supra* note 3, at 2-4.

902. *Vodafone Goes Live*, *supra* note 870.

jority Australian representation on its board of directors.<sup>903</sup> In the meantime, the Vodafone Group's equity financing of the endeavor allows Vodafone to be free from the constraints imposed by the short-term interests of shareholders.<sup>904</sup>

Early the bidding process for the cellular license, Vodafone said it would participate as a majority shareholder in a consortium called Arena GSM with other Australian shareholders. However, these shareholders failed to materialize and the name Arena was dropped.<sup>905</sup>

Under the terms of its license, Vodafone has the right to resell Telstra's analog service, but Vodafone has decided against doing so and will focus solely on providing digital GSM service.<sup>906</sup> Furthermore, Vodafone has chosen to operate solely as an air-time wholesaler, with resellers providing retail mobile telecommunications services to end-users.<sup>907</sup> Vodafone sells its network air-time to service providers who, in turn, sell service to the consumer. Service providers may also appoint dealers, giving Vodafone even wider market coverage.<sup>908</sup> Vodac, a wholly owned subsidiary of the Vodafone Group, is the principal retailer of air-time and network services on the Vodafone network.<sup>909</sup> Other resellers of service over Vodafone Pty's network include: Stanilite, JNR, Telesell, Hatadi Roadhound, and Digital Direct.<sup>910</sup>

Vodafone's marketing strategy has given it a significant jump on its better established competitors in the GSM market. Vodafone leads the three cellular network providers with nearly two-thirds of the GSM market.<sup>911</sup> And as the

903. *Vodafone Customers Now Exceed 10,000*, EXCHANGE, July 1, 1994.

904. Winkler, *supra* note 871, at 19.

905. *Vodafone Goes Live*, *supra* note 870.

906. Winkler, *supra* note 871, at 19.

907. COMPETITIVE SAFEGUARDS & CARRIER PERFORMANCE, *supra* note 783, at 4.

908. Winkler, *supra* note 871, at 19.

909. VODAFONE GROUP PLC, 1994 SEC FORM 20-F, at 11 (1994).

910. *Vodafone Goes Live*, *supra* note 870.

911. Winkler, *supra* note 871, at 19.

Australian GSM market grows relative to its analog counterpart, Vodafone expects to capture 25 percent of the Australian cellular market by 2000.<sup>912</sup>

Probably the most significant benefit of GSM relative to other cellular standards is its widespread acceptance around the world (particularly throughout Europe) and the resultant ability of GSM operators to offer international roaming. Vodafone offers international roaming to the United Kingdom, Hong Kong, Greece, Sweden, New Zealand, Germany, Denmark, Poland, Norway, Switzerland, and South Africa.<sup>913</sup>

Under the terms of Vodafone's cellular license, the government is supposed to mandate the phased shutdown of Telstra's analog cellular network by 2000.<sup>914</sup> This plan has met with significant resistance, and several parties, especially Telstra and Optus, argue that the government should rescind its agreement to shut down of the analog network.<sup>915</sup> Vodafone has stated that it will litigate if the government rescinds this condition of the license for which Vodafone paid A\$140 million.<sup>916</sup>

Apart from its current interest in Optus, BellSouth recently sold its interest in Link Telecommunications, a cellular and paging business, to a consortium that includes the PT Bakrie Communications Corporation, an Indonesian telecommunications company; Terry Winters, founder of Link; and Simon Asia Direct Investment Fund L.P., headed by William E. Simon, Sr., former U.S. Treasury Secretary.<sup>917</sup> The consortium plans to invest \$40 million in Link over the next two years.<sup>918</sup> Link, based in Melbourne, was established in 1982 to provide message paging to Australia and has expanded into

912. *Vodafone Goes Live*, *supra* note 870.

913. *Vodafone Customers Now Exceed 10,000*, *supra* note 903.

914. Winkler, *supra* note 871, at 19.

915. *Id.*

916. *Vodafone Customers Now Exceed 10,000*, *supra* note 903.

917. *BellSouth Sells Australian Unit*, N.Y. TIMES, Apr. 7, 1995, at 42.

918. *Id.*

answering-machine services and retailing of telecommunications products.<sup>919</sup> BellSouth acquired Link in 1987 but sold the company to avoid conflicts of interest arising from BellSouth's ownership stake in Optus.<sup>920</sup>

### *Japan*

The Japanese government traditionally maintained strict control over the country's telecommunications industry. But with the difficulty inherent in trying to orchestrate progress through central planning in the increasingly complex field of telecommunications, the Japanese government decided that the future development and operation of their telecommunications markets would be navigated most efficiently and productively through private ownership and competition. So in 1985, the Japanese government began privatizing and liberalizing all sectors of its telecommunications industry.

Japan's telecommunications services market is second in size only to that of the U.S. Despite the size of its markets, Japan has not achieved the high level of development in the emerging telecommunications markets that the U.S. has achieved.<sup>921</sup> Japan's traditional telephony infrastructure is relatively mature, but the country lags far behind the U.S. in cellular penetration and broadband infrastructure development. As of 1992, nearly 58 million telephone lines served Japan's 123.4 million people, amounting to a telephone penetration rate of 46.74 telephone lines per 100 inhabitants, compared to 56.49 lines per 100 inhabitants in the U.S.<sup>922</sup> The wireless sector has low penetration for such a wealthy country—only

919. *BellSouth Sells Australian Telecommunications Unit to Indonesia Group*, ORLANDO SENTINEL, Mar. 12, 1995, at H5.

920. *Id.*

921. *Colossus at bay*, ECONOMIST, Dec. 10, 1994, at 63.

922. ITU WORLD DEVELOPMENT REPORT, *supra* note 6, at A-39.

1.6 percent of the population.<sup>923</sup> The low penetration combined with the introduction of competition suggest that subscribership will grow substantially. Finally, despite claims by Japanese officials that the country will have a nationwide broadband network in place and operational by 2010, new entrants, with foreign participants, are just beginning to develop the cable television market.

Japan has witnessed the early benefits of competition and increased investment in its telecommunications markets, but, like other countries, only the less mature markets have actually been opened to foreign participation. Japan has a 33 percent cap on foreign ownership of telecommunications licensees. However, the investment by foreign firms, particularly American, remains relatively limited, with appreciable levels of investment occurring only in the wireless and cable television industries.

*Telephony.* Until 1985, Japan's national telecommunications operator was part of the Ministry of Posts and Telecommunications (MPT). In 1985, the Japanese Diet passed the Nippon Denshin Denwa Kabushiki Kaisha Law (the NTT law). Pursuant to this law, Nippon Telegraph and Telephone Corporation (NTT) was incorporated as an ordinary business corporation, and Nippon Telegraph and Telephone Public Corporation was dissolved. Also pursuant to the NTT law, the MPT began to privatize NTT in 1986. Shares were sold in three domestic public offerings; the second and third offerings were held in 1987 and 1988. Through these three offerings, the government sold a total of 34.37 percent of NTT, raising more than \$12 billion.<sup>924</sup> The NTT law stipulates that the government shall reduce its ownership of NTT to 33.3 percent, but the government has delayed any further sale for several years because of unfavorable stock market conditions.

923. AIRTOUCH COMMUNICATIONS, INC., 1993 SEC FORM 10-K, at 14 (1994).

924. ITU WORLD DEVELOPMENT REPORT, *supra* note 6, at 56.

The Telecommunications Business Law, also passed in 1985, liberalized the telecommunications services sector in Japan. The law ended NTT's monopoly status as the provider of local and domestic long-distance telephony service and the monopoly status of privately owned Kokusai Denshin Denwa (KDD) as the sole provider of international long-distance service. The law differentiates between re-sellers of value-added services (designated as Type II operators), who need only register with the MPT, and facilities-based operators (designated as Type I operators), who must obtain a license from the MPT.<sup>925</sup>

Under the Telecommunications Business Law and the Electric Wave Law (the law governing the allocation and use of radio spectrum rights), the MPT has the authority to grant telecommunications licenses. These laws restrict foreign participation in, or ownership of, a telecommunications licensee in three ways. First, the percentage of a telecommunications licensee held directly or indirectly by foreigners shall be less than one-third of the licensee's total voting rights. Second, the number of foreigners who may be elected as directors shall be less than one-third of the total number of directors. Third, foreign companies and foreign persons may not be selected as the representative director or other representative position of the licensee.<sup>926</sup>

Also, until 1992, foreign nationals and foreign corporations were prohibited from owning any share of NTT or KDD. Under an amendment to the NTT law that became effective in August 1992, foreign nationals and foreign corporations may own any amount less than 20 percent of either company's total voting equity.<sup>927</sup> Article 4(2) of the NTT law defines the applicable foreign entities as:

925. *Id.* at 61.

926. AIRTOUCH COMMUNICATIONS, INC., 1993 SEC FORM 10-K, at 14 (1994).

927. INTERNATIONAL TELECOMMUNICATIONS UNION, *supra* note 6, at 60.



(1) any person who does not have Japanese nationality;

(2) any foreign government or any of its representatives;

(3) any foreign juridical person or association; and

(4) any juridical person or association whose proportion of voting rights directly owned by persons or bodies described in any of the preceding three items is equal to or higher than the proportion to be specified by the applicable ordinance of the Japanese Ministry of Posts and Telecommunications.<sup>928</sup>

Competition is slowly emerging in segments of Japan's basic voice telephony market, and several foreign companies have limited equity stakes in the entrants. KDD now has two competitors (both licensed in 1988) providing international telecommunication services in Japan: International Digital Communications (IDC) and International Telecom Japan. IDC's ownership structure exemplifies a common arrangement in many countries undergoing liberalization of their telecommunications industries. Large and influential domestic corporations with no background in telecommunications bring in a foreign telecommunications firm (or several) as a minority investor for its experience and technological expertise, and the foreign firm readily accepts the opportunity to participate as a minority investor in the hope of leveraging its initially limited role into a greater presence in the country's telecommunications industry. Itochu and the Toyota Motor Corporation are IDC's principal shareholders. Cable & Wireless and AirTouch

928. *Id.*

both have minority interests, 17.6 percent and 10 percent respectively.<sup>929</sup> As of 1994, IDC had captured 19 percent of Japan's international traffic.<sup>930</sup>

Three companies, all licensed in 1986, compete with NTT in long-distance telephony: DDI Corporation, Japan Telecom, and Teleway Japan Corporation. Together, these three companies have garnered nearly one-third of Japan's domestic long-distance market.<sup>931</sup> Kyocera Corporation, a large Japanese ceramics corporation, owns 22.34 percent of DDI.<sup>932</sup> Two British international investment trusts each own a small interest in DDI.<sup>933</sup> As of June 1, 1994, Toyota Motor Corporation owned 6.9 percent of Teleway Japan and had announced its intention to participate in Teleway's capital increase, thereby raising Toyota's interest in Teleway to 40 percent.<sup>934</sup> The MPT has not indicated whether it will license any other operators to compete in the long-distance market in the near future.

Six companies, all affiliates of local electricity firms, are already licensed to operate local telephone networks.<sup>935</sup> These companies, of which TT Net operates in the Tokyo area, have difficulty gaining any appreciable market share because NTT cross-subsidizes its local services with long-distance revenues to offer local calls below cost. Despite the local service rate increase implemented by NTT in February

929. CABLE & WIRELESS, PLC, 1994 SEC FORM 20-F, at 40 (1994); AIRTOUCH COMMUNICATIONS, INC., 1994 ANNUAL REPORT 64 (1995).

930. CABLE & WIRELESS, PLC, 1994 SEC FORM 20-F, at 40.

931. *Colossus at bay*, *supra* note 921, at 63.

932. KYOCERA CORP., 1994 ANNUAL REPORT 34 (1994).

933. DUNEDIN JAPAN INVESTMENT TRUST PLC, 1994 ANNUAL REPORT AND ACCOUNTS 15 (1994) (a fraction of 1 percent); GOVETT ORIENTAL INVESTMENT TRUST PLC, 1994 ANNUAL REPORT AND ACCOUNTS 7 (1994) (0.66 percent).

934. FINANCIAL TIMES BUSINESS ENTERPRISES LTD., FINANCIAL TIMES MERGERS & ACQUISITIONS DATABASE: TELEWAY JAPAN AND TOYOTA MOTOR CORP. (June 1, 1994).

935. *Colossus at bay*, *supra* note 921, at 64.

1995—the first allowed by the MPT since 1976, the competitive entrants, realistically, will only be able to penetrate the local telephony market once NTT has normalized further its rates for local and long-distance calls.

*Cable Television and Telephony.* Cable networks are relatively undeveloped in Japan, but with revision of the regulation that hindered maturation of the cable market, the Japanese cable television and telephony industry are poised for tremendous growth.

Cable television operators in Japan have achieved only a very low penetration rate. Less than 5 percent of the forty-two million homes with televisions currently subscribe to cable service.<sup>936</sup> A poll conducted in 1994 revealed that 60 percent of Japanese consumers had never heard of cable television.<sup>937</sup> These market conditions appear to be changing, however. Subscriptions to cable television service are increasing at an annual rate of 50 percent, and MPT officials predict that by 2010 cable television and telephony penetration will reach 60 percent.<sup>938</sup>

The current low penetration rate is partly attributable to poor programming and high costs. The high costs stem from a regulatory apparatus that has only recently been revised. Until 1993, cable operators were confined to one geographic area and had to be owned by local entities. Such requirements prevented the creation of large multiple systems operators (MSOs) that could achieve economies of scale in programming, network development, and customer billing.<sup>939</sup>

936. Norihiko Shirouzu, *After Years of Static, Japanese Cable Changes Channels*, WALL ST. J., Feb. 9, 1995, at B4; Eben Shapiro & Norihiko Shirouzu, *Time Warner, Allies Mull Japan Cable Project*, WALL ST. J., Dec. 27, 1994, at A3.

937. Shirouzu, *After Years of Static*, *supra* note 936.

938. David P. Hamilton, *Big Fiber-Optic Project is Private Sector's Job, Japan's Reformers Say*, WALL ST. J., Aug. 15, 1994, at A1.

939. Andrew Pollack, *Time Warner in Japanese Cable Venture*, N.Y. TIMES, Jan. 10, 1995, at D2.

In December 1993, the MPT abolished the geographic and local ownership restrictions and began to allow cable television companies to provide telephony services on an experimental basis.<sup>940</sup> Since November 1994, cable companies have been able to apply for permanent telephony licenses.<sup>941</sup> Though the regulation may change as the cable television market matures, NTT presently may not provide video programming over its networks, and it may own no more than 3 percent of cable systems; NTT currently holds small shares in twenty-nine cable companies.<sup>942</sup>

The opportunity created by the abolition of the geographic and local ownership restrictions and the establishment of cable telephony licenses has prompted the formation of three major joint ventures that intend to build and operate multimedia broadband networks in Japan, providing both video programming and telephony services. These three ventures are Jupiter Telecommunications Company, TITUS, and CT Telecom.

Tele-Communications Inc. (TCI), the largest cable television MSO in the U.S., formed Jupiter with Sumitomo Corporation of Japan. Together, the two companies intend to invest approximately \$500 million during the late 1990s to build a network of broadband cable systems capable of providing both video programming and telephony services.<sup>943</sup> TCI owns 40 percent of the joint venture, and Sumitomo owns 60 percent.<sup>944</sup> The MPT has allowed TCI's interest to exceed the 33.3 percent limit on foreign ownership purportedly because the government views the MSO's main function as investing in cable television systems, not directly managing the broad-

940. Hamilton, *Big Fiber-Optic Project*, *supra* note 937.

941. *Colossus at bay*, *supra* note 921, at 64.

942. Shirouzu, *After Years of Static*, *supra* note 936.

943. *Id.*

944. Norri Kageki, *U.S. cable-TV titan enters Japan venture: Tele-Communications, Sumitomo target new media*, NIKKEI WEEKLY, Dec. 12, 1994, at 8.

casters.<sup>945</sup> Presumably, the MPT, in waiving the foreign ownership limit, also recognized the value of the foreign capital in developing a nationwide broadband network.

Sumitomo already owns interests ranging from 0.3 percent to 80 percent in 31 cable systems. Until now, each system has been managed independently, but Sumitomo intends to contribute these systems gradually to the Jupiter venture. Sumitomo initially will transfer six cable systems, covering 775,000 homes in Tokyo, of which 30,000 have already subscribed. The Tokyo systems include those operating in Suginami Ward, Nerima Ward, and the Fuchu area.<sup>946</sup>

Jupiter will compete against TITUS, a joint venture of Toshiba, Itochu, Time Warner, and U S West. In January 1995, the four companies announced that they would invest \$400 million to develop an MSO that would initially provide cable television services in ten or more areas of Japan, each with 150,000 to 200,000 households.<sup>947</sup> Together, Itochu and Toshiba hold a majority 56.8 percent interest in Titus—each own 28.4 percent. The American companies hold directly the maximum foreign ownership allowed, 33.3 percent; Time Warner owns 15.4 percent, and U S West owns 17.9 percent.<sup>948</sup> Indirectly, the foreign ownership of TITUS actually exceeds the one-third cap because the remaining 9.9 percent of TITUS is owned by Time Warner Entertainment Japan Inc. (TWEJ), a joint venture company established by the same four companies to expand and develop the market for entertainment services in Japan.<sup>949</sup> In connection with its investment in Time Warner Entertainment, U S West owns 12.75 percent of the common stock of TWEJ.<sup>950</sup> Itochu and Toshiba both own 25

945. *Id.*

946. *Id.*

947. Pollack, *Time Warner in Japanese Cable Venture*, *supra* note 939, at D2.

948. *Id.*

949. *Id.*

950. U S WEST INC., 1994 ANNUAL REPORT 39 (1995).

percent of TWEJ, and Time Warner owns the remaining 37.25 percent.<sup>951</sup>

Several months before the creation TITUS, Time Warner and U S West became the first foreign companies to acquire an equity stake in the Japanese cable television market when they jointly purchased one-third of Chofu Cable Television KK (Chofu) from Itochu.<sup>952</sup> Chofu operates a cable television system in the Tokyo metropolitan area.<sup>953</sup> Itochu, Time Warner, and U S West will likely transfer Chofu to TITUS.

Continental Cablevision and Tomen, a Japanese trading company, are forming a third joint venture, called CT Telecom, that will compete as an MSO with both Jupiter and TITUS. Terms of the agreement are not yet available. The deal should be completed during the first half of 1995.<sup>954</sup>

*Wireless.* Burdensome regulation and high prices have constrained the growth of the Japanese wireless telephony market. By removing regulatory impediments and introducing effective and pervasive competition, however, the MPT has ended the lethargy and permitted rapid growth to take place in the wireless telephony sector. Until the mid-1990s, growth in the Japanese wireless market was sluggish and penetration remained relatively low—approximately 1.6 percent.<sup>955</sup> Several factors contributed to the low penetration rate, including the relatively high activation, access, and usage charges associated with NTT's analog cellular service; the only recent introduc-

951. Toru Hirose, *Toshiba Plays Supporting Role in Showbiz Venture: Partnership Strategy Pays Off With Stable Time Warner Ties*, NIKKEI WEEKLY, Dec. 4, 1994, at 8.

952. *Itochu Corp.: Time Warner, U S West Buy Stakes in a Cable-TV Unit*, WALL ST. J., Nov. 15, 1994, at A19.

953. *U S West, Time Warner to Buy into Chofu Cable*, NIKKEI WEEKLY, Nov. 21, 1994, at 9.

954. Andrea Hirsig, *Continental in Japan venture*, HOLLYWOOD REP., Mar. 21, 1995, at 24.

955. AIRTOUCH COMMUNICATIONS, INC., 1993 SEC FORM 10-K, at 14 (1994).

tion of wireless competitors; and the traditional MPT requirement that subscribers lease rather than purchase their cellular telephones. The MPT adopted regulations as of April 1, 1994 permitting subscribers to own their cellular telephones,<sup>956</sup> but the cost of service remained high: \$1,000 to purchase the cellular telephone, \$400 to register for service, \$95 for the monthly access fee, and 60 cents per minute for usage.<sup>957</sup> In December 1994, the MPT took further measures to stimulate growth in the wireless telephony market by authorizing substantial cuts in subscription fees, weekend and holiday rates, and handset purchases and rental fees.<sup>958</sup> The added competition within the cellular market, as well as the competition that will result from the introduction of the new wireless technology known as the Personal Handy Phone System (PHS), will reduce the price of cellular service and further expand demand in the wireless telephony market.

The Japanese cellular market is divided into eleven regions.<sup>959</sup> Currently, two operators compete in each region, providing analog service: NTT (the only nationwide operator) and a regional operator. The MPT awarded additional spectrum to each of these operators to provide digital cellular service by the end of 1994. In some of the regions, the MPT awarded a third license to provide digital service, and may, in the near future, license a fourth.<sup>960</sup>

As a result of market liberalization and the allowance for new competitive entrants, the MPT has sparked what appears to be a period of accelerating growth in the Japanese wireless telecommunications market. With the introduction of

956. *Id.*

957. *Japan Calls It PHS and Competitors Listen*, WALL ST. J., Mar. 28, 1995, at A19 (advertising section).

958. AIRTOUCH COMMUNICATIONS, INC., 1994 ANNUAL REPORT 7 (1995).

959. AIRTOUCH COMMUNICATIONS, INC., 1993 SEC FORM 10-K, at 14 (1994).

960. *Id.* at 15.

PHS service and the added competition in the cellular market, the price of wireless telephony service in Japan will likely decrease. The low penetration rate, the establishment of competition in the wireless market, and the expected decrease in the cost of service combine to yield attractive conditions for tremendous growth over the next decade. In 1993, cellular operators added 30,000 subscribers per month; by the end of 1994, that number had risen to 300,000 new subscribers per month, and the entire market, at that point, totaled 3.5 million cellular subscribers, generating \$3.5 billion in annual revenue.<sup>961</sup> The total number of subscribers for wireless telephony services is expected to reach 5.5 million by the end of 1995, and 20 million by 2000.<sup>962</sup>

NTT and its affiliates control over 80 percent of Japan's wireless market. DoCoMo, NTT's wholly owned cellular subsidiary, itself controls 60 percent of the total market.<sup>963</sup> DoCoMo operates a nationwide analog cellular network and was awarded additional spectrum to introduce digital service by the end of 1994.<sup>964</sup>

NTT competes in various regions with three digital cellular operators: the Digital Phone Group, IDO Corp., and DDI Corp. Of the three, the Digital Phone Group, which is actually an association of three separate cellular operators, has the largest foreign equity participation. AirTouch and Cable & Wireless have significant equity stakes in each of the three Digital Phone Group companies. A group of Japanese corporations, including Japan Telecom as lead partner, a regional railway company, and Toyota Motor Corporation, own a majority of the Digital Phone Group. AirTouch is the second largest shareholder in the three companies, which are licensed

961. *Nokia Walks Softly But Carries A Big Stick*, WALL ST. J., Mar. 28, 1995, at A20 (advertising section).

962. *Id.*

963. *Colossus at bay*, *supra* note 921, at 64.

964. AIRTOUCH COMMUNICATIONS, INC., 1993 SEC FORM 10-K, at 15 (1994).



to build and operate digital cellular systems in the Tokyo, Kansai, and Tokai regions. The three systems are expected to be able to reach seventy-four million people, or 60 percent of the Japanese population.<sup>965</sup> By the end of 1994, just nine months after the group initiated service, the three companies collectively served 180,000 customers.<sup>966</sup>

The Tokyo Digital Phone Company (TDP) operates a digital cellular network in the Tokyo metropolitan region, covering thirty-nine million people. AirTouch has owns 15 percent of TDP.<sup>967</sup> Cable & Wireless owns 8 percent.<sup>968</sup>

The Kansai Digital Phone Company operates a digital cellular network in the Kansai region of western Japan, an area with approximately twenty-one million people that includes Osaka, Kyoto, and Kobe. AirTouch owns 13 percent of KDP.<sup>969</sup> Cable & Wireless owns 7.2 percent.<sup>970</sup>

The Central Japan Digital Phone Company (CDP) operates a digital cellular network in the Tokai region of central Japan. The region has more than fourteen million people; its principal city is Nagoya. AirTouch owns 13 percent of CDP.<sup>971</sup> Cable & Wireless owns 7.2 percent.<sup>972</sup>

AirTouch has provided experiential and technical leadership to the Digital Phone Group, appointing the engineering director for each company and assisting in the preparation of business plans. AirTouch has also advised the Digital Phone Group on how the three separate operators can function

965. *Id.*

966. AIRTOUCH COMMUNICATIONS, INC., 1994 ANNUAL REPORT 6 (1995).

967. AIRTOUCH COMMUNICATIONS, INC., 1993 SEC FORM 10-K, at 14 (1994).

968. CABLE & WIRELESS, PLC, 1994 SEC FORM 20-F, at 40 (1994).

969. AIRTOUCH COMMUNICATIONS, INC., 1993 SEC FORM 10-K, at 14 (1994).

970. CABLE & WIRELESS, PLC, 1994 SEC FORM 20-F, at 40 (1994).

971. AIRTOUCH COMMUNICATIONS, INC., 1993 SEC FORM 10-K, at 14 (1994).

972. CABLE & WIRELESS PLC, 1994 SEC FORM 20-F, at 40 (1994).